KEYSIGHT TECHNOLOGIES (AGILENT HP)

11970W

The Keysight Agilent 11970W is a high-performance waveguide harmonic mixer designed to extend the frequency range of compatible spectrum analyzers into the W-band (75 to 110 GHz). It employs a dual-diode design that achieves exceptionally flat frequency response and low conversion loss without the need for an external DC bias or tuning stubs, simplifying both manual and automated test setups.

SPECIFICATIONS

Physical

Power Supply	None required (unbiased passive device)
Operating Temperature	0 to 55 °C °C
Dimensions (W×H×D)	46 mm × 46 mm × 95 mm mm
Weight	0.14 kg kg
Shipping Weight	0.9 kg

Frequency & Band Specifications

Waveguide Band Designation	W-band
RF Input Frequency Range	75 to 110 GHz
LO Input Frequency Range	3 to 6.1 GHz
IF Output Frequency Range	DC to 1300 MHz
LO Harmonic Number (N)	18-

Electrical & Performance Parameters

Conversion Loss (Maximum)	46 dB
Flat Frequency Response	±3.0 dB
Maximum CW RF Input Level	+20 dBm (100 mW)
Maximum Peak Pulse Power	+24 dBm (250 mW)
LO Amplitude Range	+14 to +18 dBm

Port Impedance & VSWR

Typical RF Input SWR	< 2.6:1

Physical Interfaces & Connectors

RF Input Connector Type	WR-10 Waveguide (UG-387/U flange)
LO Input Connector Type	SMA female
IF Output Connector Type	SMA female

DC Bias & Control Requirements

DC Bias or Tuning Adjustments	None required

System Compatibility

Compatible Spectrum Analyzers	Agilent E4440A/46A/48A PSA Series, Agilent E4407B ESA-E Series, Agilent 8560 E-Series, Agilent 8566B (with 11975A amplifier), Agilent 70000 modular measurement system (with 70907A/B external mixer interface modules)

Environmental

Storage Temperature	-40 to +75 °C
Operating Altitude	up to 4,570 m
Non-Operating Altitude	up to 15,240 m
Operating Humidity	95% RH at 40 °C

General

Calibration	Individually calibrated conversion loss curve printed on the mixer body

Standards & Compliance

Vibration and Shock Compliance	MIL-T-28800C, Class 5

TECHNOLOGY

Waveguide Harmonic Mixer

APPLICATIONS

RF & Microwave Spectrum Analysis

Generated by SpecAtlasHub (specatlashub.com). Specifications are compiled from available sources and are subject to change — verify critical values against the manufacturer before purchase.